

I CLAIM:

1. A method for driving an electric percussion tool, said electric percussion tool including a solenoid, a plunger core slidably received in said solenoid and actuatable by said solenoid to move
5 relative to said solenoid, a spring member for applying a spring biasing force against said plunger core to recover said plunger core relative to said solenoid, and a switch for initializing said solenoid, said method comprising:

initializing said solenoid with said switch,
10 energizing said solenoid for a first time interval to actuate said plunger core to slide relative to said solenoid, from a first position to a second position, and to conduct a first driving operation,

de-energizing said solenoid for a second time interval, to allow said plunger core to be recovered back from said second position to
15 said first position by said spring member,

energizing said solenoid again for a third time interval to actuate said plunger core to slide relative to said solenoid, from said first position to said second position, and to conduct at least one second driving operation, and

20 terminating said solenoid,

said second time interval being arranged longer than said first time interval, to allow said spring member to have a longer time to recover said plunger core from said second position to said first position, and to allow said spring member to be made with a smaller
25 spring biasing force.

2. A method for driving an electric percussion tool, said electric percussion tool including a solenoid, a plunger core slidably

received in said solenoid and actuatable by said solenoid to move relative to said solenoid, a spring member for applying a spring biasing force against said plunger core to recover said plunger core relative to said solenoid, and a switch for initializing said solenoid,

5 said method comprising:

initializing said solenoid with said switch,

providing a first positive signal, at least one second positive signal, and a third positive signal to operate said solenoid,

10 said first positive signal and said third positive signal being provided to energize said solenoid to actuate said plunger core to slide relative to said solenoid, from a first position to a second position, and to conduct a first and at least one second driving operation,

15 said at least one second positive signal being provided to de-energize said solenoid, and to allow said plunger core to be recovered back from said second position to said first position by said spring member, and to allow said spring member to have a longer time to recover said plunger core from said second position to said first position, and to allow said spring member to be made
20 with a smaller spring biasing force, and

terminating said solenoid.

3. A method for driving an electric percussion tool, said electric percussion tool including a solenoid, a plunger core slidably received in said solenoid and actuatable by said solenoid to move
25 relative to said solenoid, a spring member for applying a spring biasing force against said plunger core to recover said plunger core relative to said solenoid, and a switch for initializing said solenoid,

said method comprising:

initializing said solenoid with said switch,

providing a first positive sine wave signal, at least one second
positive sine wave signal, and a third positive sine wave signal to
5 operate said solenoid,

said first positive sine wave signal and said third positive sine
wave signal being provided to energize said solenoid to actuate said
plunger core to slide relative to said solenoid, from a first position
to a second position, and to conduct a first and at least one second
10 driving operation,

said at least one second positive sine wave signal being
provided to de-energize said solenoid, and to allow said plunger
core to be recovered back from said second position to said first
position by said spring member, and to allow said spring member to
15 have a longer time to recover said plunger core from said second
position to said first position, and to allow said spring member to be
made with a smaller spring biasing force, and
terminating said solenoid.

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